

## REMARKS

In view of the above amendments and the following remarks, reconsideration of the rejections contained in the Office Action of December 17, 2003 is respectfully requested.

The entire specification has now been reviewed and revised so as to make various editorial amendments thereto. For example, non-idiomatic language has been removed, and minor grammatical corrections have been made. Due to the number of changes, the amendments have been incorporated into the attached substitute specification. For the Examiner's benefit, a copy of the marked-up original specification, indicating the changes made to the specification, has also been prepared and submitted herewith. No new matter has been added by any of these changes. Thus, the Examiner is respectfully requested to enter the attached substitute specification.

The Examiner has rejected original claims 1-12 as being anticipated by the Inana reference (USP 5,128,770). However, as indicated above, the original claims have been cancelled and replaced with new claims 13-33, including new independent claims 13 and 22. For the reasons discussed below, it is respectfully submitted that the new claims are clearly patentable over the prior art of record.

New independent claim 13 is directed to a camera rotation device that comprises a first rotation drive mechanism operable to rotate a first rotatable member about a first axis, and the first rotation drive mechanism includes a first motor having an axis of rotation *parallel* to the first axis. In addition, the camera rotation device comprises a second rotation drive mechanism operable to rotate a second rotatable member about a second axis, and the second rotation drive mechanism includes a second motor having an axis of rotation *parallel* to the second axis. Because the axis of rotation of the first motor and the axis of rotation for the second motor are *parallel* to the axis about which the first rotatable member and the second rotatable member are rotated, respectively, the drive mechanisms can be simplified. Thus, the overall size of the camera rotation device can be reduced, and the camera rotation device can be accurately and quickly assembled.

The Inana reference discloses a video camera including a first rotatable member 216 and a second rotatable member 214. However, as clearly illustrated in Figure 5 of the Inana reference, the first motor 242 of the first rotation drive mechanism for rotating the first rotatable member 216 has

an axis of rotation *perpendicular* to an axis of rotation of the first rotatable member 216. Similarly, the second motor 220 of the second rotation drive mechanism for rotating the second rotatable member 214 has an axis of rotation *perpendicular* to the axis of rotation 217 of the second rotatable member 214. Thus, it is submitted that the Inana reference does not disclose or even suggest a camera rotation device including a first motor and a second motor arranged as recited in new independent claim 13. Accordingly, it is respectfully submitted that new independent claim 13 and the claims that depend therefrom are clearly patentable over the prior art of record.

New independent claim 22 is directed to a camera rotation device that comprises a first rotation drive mechanism operable to rotate a first rotatable member about a first axis. The first rotation drive mechanism includes a first motor and includes a first gear mechanism, and the first gear mechanism has a first end directly engaging the first motor and has a second end directly engaging the main base. The camera rotation device further comprises a second rotation drive mechanism operable to rotate a second rotatable member about a second axis. The second rotation drive mechanism includes a second motor and includes a second gear mechanism. The second gear mechanism has a first end directly engaging the second motor and has a second end directly engaging the first rotatable member. At least one of the first gear mechanism and the second gear mechanism includes *only* spur gears.

Because the first gear mechanism and/or the second gear mechanism of independent claim 22 includes *only* spur gears, friction loss can be minimized and transmission efficiency will be increased as compared, for example, to a device that includes a gear mechanism having at least one worm gear. Furthermore, because the transmission efficiency is increased, the necessary torque generated by the motor can be reduced, so that the size of the motor can also be reduced. Furthermore, because the first gear mechanism has a first end *directly engaging* the first motor and has a second end *directly engaging* the main base, while the second gear mechanism has a first end *directly engaging* the second motor and has a second end *directly engaging* the first rotatable member, and because at least one of the gear mechanisms includes only spur gears, the at least one gear mechanism that includes only spur gears does not include belts or pulleys in order to transmit torque for the rotation. Thus, regular maintenance of the camera rotation device is minimized and

much less frequent, and operation of the camera rotation device becomes much more reliable. Finally, providing at least one gear mechanism that includes only spur gears prevents strain on the camera rotation device if someone attempts to manually rotate the camera, so that failure of the camera rotation device can be avoided (see page 18, lines 3-10 of the original specification).

As illustrated in Figure 5 of the Inana reference, a first rotation drive mechanism for rotating a first rotatable member 216 about a first axis includes a first motor 242 and a first gear mechanism having a second end that appears to directly engage a base (the mount bore) 264. However, the first gear mechanism engages the first motor 242 via pulley 246 and belt 244. Thus, the Inana reference does not disclose or suggest a first gear mechanism that has a first end *directly engaging* a first motor. Similarly, the second rotation drive mechanism for rotating the second rotatable member 214 about a second axis has a first end that is connected to a second motor 220 via a belt 222 and pulley 224. Thus, the Inana reference also does not disclose or suggest a second gear mechanism having a first end *directly engaging* a second motor. Finally, the Examiner is requested to note that both the first gear mechanism and the second gear mechanism of the Inana reference includes a worm gear 256, 226, respectively. Thus, the Inana reference does not disclose or suggest that at least one of the first gear mechanism and the second gear mechanism includes only spur gears. Therefore, it is respectfully submitted that the Inana reference does not disclose or suggest a first rotation drive mechanism and a second rotation drive mechanism as recited in new independent claim 22. Accordingly, it is respectfully submitted that independent claim 22 and the claims that depend therefrom are clearly patentable over the prior art of record.

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance. However, if the Examiner should have any comments or suggestions to help speed the prosecution of this application, the Examiner is requested to contact the applicants' undersigned representative.

Respectfully submitted,

Tetsurou KAJINO et al.

By: 

W. Douglas Hahm  
Registration No. 44,142  
Attorney for Applicants

WDH/kes  
Washington, D.C. 20006-1021  
Telephone (202) 721-8200  
Facsimile (202) 721-8250  
March 17, 2004